



**Cover photos:** Landsat 7 satellite image of western Lake Erie Basin and Detroit River corridor provided by USGS Landsat Project; Upper left: angler with walleye (*Sander vitreus*) by Jim Barta; Middle left: lake sturgeon (*Acipenser fulvescens*) by Glenn Ogilvie; Lower left: *Hexagenia* by Lynda Corkum; Center: lake whitefish (*Coregonus clupeaformis*) by James Boase/U.S. Fish and Wildlife Service; Lower right: juvenile peregrine falcon (*Falco peregrinus*) by Craig Koppie/U.S. Fish and Wildlife Service; Bottom left: bald eagle (*Haliaeetus leucocephalus*) by Steve Maslowski/U.S. Fish and Wildlife Service.



STATE OF THE STRAIT  
STATUS AND TRENDS OF KEY INDICATORS

Edited by: John H. Hartig, Michael A. Zarull, Jan J.H. Ciborowski, John E. Gannon,  
Emily Wilke, Greg Norwood, and Ashlee Vincent

2007

STATE OF THE STRAIT  
STATUS AND TRENDS OF KEY INDICATORS

2007

Edited by:

John H. Hartig, U.S. Fish and Wildlife Service  
Michael A. Zarull, Environment Canada  
Jan J.H. Ciborowski, University of Windsor  
John E. Gannon, International Joint Commission  
Emily Wilke, Southwest Michigan Land Conservancy  
Greg Norwood, U.S. Fish and Wildlife Service  
Ashlee Vincent, University of Windsor

Based on the Detroit River-Western Lake Erie Indicator Project, a three-year U.S.-Canada effort to compile and summarize long-term trend data, and the 2006 State of the Strait Conference held in Flat Rock, Michigan

Suggested citation: Hartig, J.H., M.A. Zarull, J.J.H. Ciborowski, J.E. Gannon, E. Wilke, G. Norwood, and A. Vincent, eds. 2007.

*State of the Strait: Status and Trends of Key Indicators.*

Great Lakes Institute for Environmental Research, Occasional Publication No. 5,  
University of Windsor, Ontario, Canada.

ISSN 1715-3980

Report also available at:

[www.StateoftheStrait.org](http://www.StateoftheStrait.org)

[www.epa.gov/med/grosseile\\_site/indicators/index.html](http://www.epa.gov/med/grosseile_site/indicators/index.html)

# ACKNOWLEDGEMENTS

## Acknowledgements

The Detroit River-Western Lake Erie Indicator Project, the December 5, 2006 State of the Strait Conference, and this final report were made possible by financial and in-kind support from many organizations and agencies. We gratefully acknowledge such support from the following sponsors:

- Canadian Consulate
- CDM
- Detroit Water and Sewerage Department
- DTE Energy
- Environment Canada
- Environmental Management Association
- Essex Region Conservation Authority
- Friends of the Detroit River
- Great Lakes Fishery Trust
- International Joint Commission
- International Wildlife Refuge Alliance
- Metropolitan Affairs Coalition
- Michigan Sea Grant
- University of Michigan-Dearborn
- University of Windsor
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service

The foundation of this project and report are the indicator trend data and knowledge provided by many partners. Without access to their data, knowledge, and practical management experience, this project and report would not have been possible. We gratefully acknowledge the following partners:

- Ashland University
- Bird Studies Canada
- Central Michigan University
- Community Foundation for Southeast Michigan

- Detroit Audubon Society
- Detroit Water and Sewerage Department
- Downriver Linked Greenways
- Downriver Stream Team
- DTE Energy
- Environment Canada
- Essex Region Conservation Authority
- Fisheries and Oceans Canada
- Great Lakes Fishery Commission
- Habitat Solutions
- Heidelberg College
- Hinshon Environmental Consulting
- Holiday Beach Migration Observatory
- International Association for Great Lakes Research
- International Joint Commission
- Michigan Department of Community Health
- Michigan Department of Environmental Quality
- Michigan Department of Natural Resources
- Michigan Sea Grant
- Metropolitan Affairs Coalition
- Michigan Trails and Greenways Alliance
- Monroe Water Treatment Plant
- National Oceanic and Atmospheric Administration
- Ohio Department of Natural Resources
- Ontario Ministry of the Environment
- Rouge River Bird Observatory
- Southeast Michigan Council of Governments
- Southeastern Michigan Raptor Research
- The Nature Conservancy
- The Ohio State University
- U.S. Coast Guard
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- U.S. Geological Survey
- Union Water Treatment Plant
- University of Michigan
- University of Michigan-Dearborn

- University of Toledo
- University of Windsor
- Utica College
- Wade Trim
- Washtenaw County Conservation District
- Wayne County Department of Environment
- Wayne State University

The project was directed by a State of the Strait Steering Committee made up of the following members:

- Mary Bohling, Michigan Sea Grant
- Jan Ciborowski, University of Windsor
- Melanie Coulter, Detroit River Canadian Cleanup
- Rose Ellison, U.S. Environmental Protection Agency
- John Gannon, International Joint Commission
- Orin Gelderloos, University of Michigan-Dearborn
- John Hartig, U.S. Fish and Wildlife Service
- George Jacobsen, Metropolitan Affairs Coalition
- John Nasarzewski, Southgate Anderson High School
- Greg Norwood, U.S. Fish and Wildlife Service
- Roy Schrameck, Environmental Consulting & Technology, Inc.
- Bruce Szczechowski, Southgate Anderson High School
- Roberta Urbani, DTE Energy
- Ashlee Vincent, University of Windsor
- Emily Wilke, Southwest Michigan Land Conservancy
- Michael Zarull, Environment Canada

We would also like to express our sincere thanks to the university students and interns who helped prepare selected indicator reports: Guadalupe Cummins, Olivia Napierski, Lisa Perschke, and Lena Cicchelli.

Finally, we would like to acknowledge and thank: CDM, and especially Elizabeth Nicol, for their help with design and layout of this report; Karen Koch for help with copy editing; and Kay Morrison of the U.S. Environmental Protection Agency's Large Lakes Research Station for serving as webmaster on this project. Without their contributions, this report and the associated website would not have been possible.